

What is claimed is:

1. A method for finding in a larger system, components or subsystems that meet a predefined set of requirements, through the use of rule-based searches and block diagrams, the method comprising:

5 selecting a first block from a block design of a system, where the block design comprises a plurality of blocks, each block representing a component or subsystem of the block design;

submitting a search query to a database of objects for researching which component or subsystem to use for the first block;

10 receiving an answer set from the database of objects that satisfies the search query, where the answer set comprises at least one object from the database of objects;

assigning at least one candidate object from the answer set to the first block in the block design; and

15 repeating the steps of selecting, submitting, receiving, and assigning for at least one other block in the block design.

2. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 1, wherein the step of assigning is automatic if the answer set contains exactly one object.

20 3. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 1, wherein the step of repeating is repeated for all remaining blocks in the block design.

4. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 1, wherein the step of assigning comprises:

25 associating a candidate object from the answer set to the first block in the block design; and

updating the block design by replacing the first block with a representation of the candidate object.

5. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 1, wherein the database of objects comprises engineering designs and engineering components.

6. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 1, wherein the database of objects comprises technical papers.

7. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 1, wherein the database of objects comprises patent documents.

8. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 1, wherein the database of objects comprises software modules.

9. A method for finding in a larger system, components or subsystems that meet a predefined set of requirements, through the use of rule-based searches and block diagrams comprising:

selecting a first generic description from a system design, where the system design comprises a plurality of generic descriptions, each generic description representing a component or subsystem of the system design;

submitting a search query to a database of objects for researching which component or subsystem to use for the first generic description;

receiving an answer set from the database of objects that satisfies the search query, where the answer set comprises at least one object from the database of objects;

assigning at least one candidate object from the answer set to the first generic description in the system design; and

repeating the steps of selecting, submitting, receiving, and assigning for at least one other generic description in the system design.

10. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 9, wherein the step of assigning is automatic if the answer set contains exactly one object.
11. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 9, wherein the step of repeating is repeated for all remaining blocks in the block design.
12. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 9, wherein the step of assigning comprises:  
associating a candidate object from the answer set to the first block in the block design;  
and  
updating the block design by replacing the first block with a representation of the candidate object.
13. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 9, wherein the database of objects comprises engineering designs and engineering components.
14. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 9, wherein the database of objects comprises technical papers.
15. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 9, wherein the database of objects comprises patent documents.
16. The method for finding in a larger system, components or subsystems that meet a predefined set of requirements from claim 9, wherein the database of objects comprises software modules.

17. A rule-based refinement tool, for finding in a larger system, components or subsystems that meet a predefined set of requirements, through the use of rule-based searches and block diagrams, comprising:

a database of objects, wherein the objects are related to components or subsystems;

- 5 a search engine which accepts a search query and executes the search query against the database of objects to determine which components or subsystems can be used for a generic description portion of a system design, which returns an answer set of at least one candidate object; and

an assignment processor for assigning at least one candidate object from the answer set to the generic description in the system design.

18. The rule-based refinement tool from claim 17, further comprising a drawing module which graphically presents the generic descriptions of the system design as a series of blocks interconnected to form a block diagram.

19. The rule-based refinement tool from claim 18, further wherein the assignment processor instructs the drawing module to graphically replace the generic description with the candidate object.